Amendments to the Claims:

The following listing of claims will replace any/all prior versions, and listings, of claims in the application, wherein additions are shown in underlined text and deletions are shown in strike-out text:

1. (Amended) A batch type atomic layer deposition apparatus, comprising:

a ~~reaction~~ reaction chamber having a predetermined volume constituted with an upper plate, a lower plate and sidewalls;

a rotating plate loaded with a plurality of wafers, wherein each wafer is located in the reaction chamber and loaded radially at a predetermined position disposed in an identical distance from a center of the rotating plate;

a ~~radial~~ shower head having a cylinder part and a radial cone part for forcing a gas to flow toward an upper surface of the wafer as passing through a center of the upper plate, wherein the ~~radial~~ shower head faces a center of an upper surface of the rotating plate;

a heating plate having a heating zone capable of controlling a temperature of any area and being located on the lower plate with a predetermined distance of the rotating plate;

a cooling plate attached to an upper surface of the upper plate ; and

a plasma excitement electrode ~~encompassing an entrance of the radial shower head by~~ being located between the cooling plate and the ~~entrance~~ cylinder part of the ~~radial~~ shower head.

2. (Amended) The batch type atomic layer deposition apparatus as recited in claim **1**, further comprising an ion extraction electrode ~~encompassing an exhaust of the radial shower head~~ being located between ~~the exhaust of~~ the radial cone part of the shower head and the upper plate.

3. (Amended) The batch type atomic layer deposition apparatus as recited in claim **2**, wherein the ion extraction electrode is supplied with a DC voltage.

4. (Amended) The batch type atomic layer deposition apparatus as recited in claim **1**, wherein the plasma excitement electrode is constructed in a ring type structure and supplied with a RF power.

5. (Amended) The batch type atomic layer deposition apparatus as recited in claim **1**, wherein ~~the exhaust of~~ the radial cone part of the shower head has an angle ranging from about 120° to about 160°.

6. (Amended) The batch type atomic layer deposition apparatus as recited in claim **1**, wherein a separating distance between the radial cone part of the shower head and the rotating plate ranges from about 3.5 mm to about 7 mm.

7. (Amended) A method for an in-situ cleaning of a batch type atomic layer deposition apparatus with a shower head having a cylinder part and a radial cone part, the method comprising the steps of:

depositing an atomic layer on a wafer;

injecting a cleaning gas into ~~a radial~~ the shower head;

applying a RF power to a plasma excitement electrode when the cleaning gas passes through the ~~radial shower head~~ cylinder part ; and

inducing a reaction between the cleaning gas activated by the plasma excitement electrode and a remnant atomic layer on a rotating plate.

8. (Original) The method as recited in claim **7**, wherein the RF power of about 100 W to about 600 W is applied to the plasma excitement electrode.

9. (Amended) The method as recited in claim **7**, wherein the cleaning gas is a mixture of Cl_2 gas and Ar gas, ~~however~~ each gas ~~is~~ being injected separately.

10. (Amended) A method for an in-situ cleaning of a batch type atomic layer deposition apparatus with a shower head having a cylinder part and a radial cone part, and an ion extraction electrode surrounding the radial cone part, the method comprising the steps of:

depositing an atomic layer on a wafer;

injecting a cleaning gas into ~~a radial~~ the shower head;

creating an activated molecule of a cleaning gas through applying a RF power to a plasma excitement electrode surrounding the cylinder part;

ionizing an activated molecule by applying an ion extraction voltage to ~~an~~ the ion extraction electrode ; and

inducing a collision between the ionized molecule and a remnant atomic layer of a rotating plate.

11. (Original) The method as recited in claim **10**, wherein the ion extraction voltage applied to the ion extraction electrode ranges from about -500 V to about -50 V.

12. (Original) The method as recited in claim **10**, wherein the RF power applied to the plasma excitement electrode ranges from about 100 W to about 600 W.

13. (Original) The method as recited in claim **10**, wherein the cleaning gas is a mixture of Cl_2 gas and Ar gas, and each gas is injected separately.